

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN**

E-IMAGEDATA CORP,

Plaintiff / Counter-Defendant,

v.

Case No. 16-CV-576

**DIGITAL CHECK CORP
doing business as
ST Imaging,**

Defendant / Counter-Plaintiff.

CLAIM CONSTRUCTION ORDER

I. Introduction

Plaintiff e-ImageData Corp holds the rights to three relevant patents: U.S. Patent Nos. 8,537,279 (the '279 patent) (ECF No. 1-1); 9,179,019 (the '019 patent) (ECF No. 1-2), and 9,197,766 (the '766 patent) (ECF No. 1-3). These patents relate to machines used to digitally display a microform image (e.g., microfilm or microfiche). e-Image sells a line of machines that use the patented technology.

Defendant Digital Check Corp, which does business as ST Imaging and will be referred to here as ST Imaging, is a competitor of e-Image and also sells machines that

digitally display microform images. In this lawsuit e-Image alleges that ST Imaging's machines infringe upon e-Image's patents. Preliminary to the resolution of the merits of a patent infringement suit it is necessary for the court to construe the meanings of disputed terms in the relevant patent claims. *See Markman v. Westview Instruments*, 517 U.S. 370, 372 (1996).

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys.*, 381 F.3d 1111, 115 (Fed. Cir. 2004)). "[T]he words of a claim 'are generally given their ordinary and customary meaning.'" *Id.* (quoting *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576 (Fed. Cir. 1996)). In the patent context, "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313.

Sometimes the meaning of a term is clear based upon the accepted understanding of common words. *Phillips*, 415 F.3d at 1314. But oftentimes the court must look beyond the plain words to understand how someone skilled in the relevant art would understand the disputed claim language. *Id.* In doing so, the court considers the context of the terms, including the other claims. *Id.* Differences among claims might prove useful in discerning the meaning of particular claim terms. Beyond the claims,

“highly relevant to the claim construction analysis” is the patent specification. *Id.* at 1315. Moreover, in construing a claim a court must also consider whether the patentee self-defined a term within the patent or intentionally disclaimed or disavowed an aspect of the claim. *Id.* at 1316.

Beyond the patent itself, the history of the patent’s prosecution before the Patent and Trademark Office (PTO) may help the court in understanding how the PTO and the inventor understood the patent. *Phillips*, 415 F.3d. at 1317. However, in relying upon the prosecution history, the court must be mindful that the history does not necessarily represent conclusions as to the meaning of the patent but instead might reflect ongoing negotiations between the PTO and the inventor. *Id.*

Courts may also consider extrinsic evidence, including testimony of an expert or the inventor, dictionaries, or learned treatises, when construing a claim. *Phillips*, 415 F.3d at 1317-19. However, such extrinsic evidence is “less significant than the intrinsic record” of the patent itself and its prosecution history and is unlikely be helpful unless considered in the context of the intrinsic evidence. *Id.* (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)). “It is well settled that the role of a district court in construing claims is not to redefine claim recitations or to read limitations into the claims to obviate factual questions of infringement and validity” *Am. Piledriving Equip., Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1331 (Fed. Cir. 2011).

The parties agree as to how three relevant terms should be construed:

Term	Claims	Stipulated Construction
"the first shaft"	Claim 6 of the '019 Patent	"the first motor shaft"
"the support structure"	Claim 49 of the '766 Patent	"the microform media support structure"
"first carriage"	Claim 44 of the '279 Patent; claims 1, 22, 24, 32, 41, 63, and 64 of the '019 Patent	"first movable support structure"

The parties dispute how six other relevant terms should be construed:

"second carriage" (claims 7, 10, 11, 14, 23, 32, 41, 63, 64, and 81 of the '019 Patent)	
e-Image's Proposed Construction	ST Imaging's Proposed Construction
"a second movable support structure"	"a movable support structure, separate and distinct from the first carriage"
"diffusing element" (claim 40 of the '019 Patent)	
e-Image's Proposed Construction	ST Imaging's Proposed Construction
"a device that spreads or scatters light to create a more uniform illumination source"	"frosted glass"
"lead member" (claim 44 of the '279 Patent; claims 1, 2, 3, 14, 22–24, 27, 32, 41, 43, and 63 of the '019 Patent)	
e-Image's Proposed Construction	ST Imaging's Proposed Construction
"guiding element"	"a component that guides and drives a mechanically coupled device"

“drive mechanism” (claims 1, 2, 5, 7, 9, 10, 15, 32, 41, 44, and 63 of the '019 Patent)	
e-Image’s Proposed Construction	ST Imaging’s Proposed Construction
“parts connected to a motor for moving a component”	“mechanism that applies force to drive the lead member”
“digital microform imaging apparatus” (claim 44 of the '279 Patent; claims 1, 41, 63, 64, and 91 of the '019 Patent; claims 41 and 49 of the '766 Patent)	
e-Image’s Proposed Construction	ST Imaging’s Proposed Construction
The preamble limits the claims.	The preamble is not limiting.
“at least somewhat maintain focus while adjusting zoom” (claim 19 of the '019 Patent)	
e-Image’s Proposed Construction	ST Imaging’s Proposed Construction
“keep the image generally focused while adjusting zoom”	Plain and ordinary meaning

Aside from the term “digital microform imaging apparatus,” which appears in all three patents, the other disputed terms appear only in the '019 patent. The parties agree that the terms should be construed consistently throughout the patents in suit. (ECF No. 22 at 9-10 (all pagination reflects the ECF pagination).) Therefore, the '019 patent will be the focus of this court’s analysis.

The parties submitted briefs setting forth their proposed constructions of the disputed claim terms (ECF Nos. 20, 22) and responding to each other’s proposed constructions (ECF Nos. 23, 24). In addition, the court held a claim construction hearing on August 31, 2016, at which each side presented its views as to certain disputed terms. (ECF No. 37.) The matter is now ready for resolution.

II. “Second carriage”

The parties agree that “first carriage” means the “first movable support structure.” However, they disagree as to what “second carriage” means. e-Image argues that the term refers simply to “a second movable support structure.” ST Imaging contends that it means “a movable support structure, separate and distinct from the first carriage.”

e-Image contends that the claim language does not require the carriages to be separate and distinct from other carriages. It proposes that the term “second” does not preclude connected or stacked carriages. It argues that ST Imaging’s proposed construction would exclude all of the examples of the invention that e-Image included in the patents’ specifications, including the preferred example or embodiment.

ST Imaging argues that the novel feature of e-Image’s invention is that the two carriages be able to move independently, moving the lens or moving the sensor. If the carriages were not separate and distinct from each other, they would not be independently movable. Thus, e-Image’s construction would effectively obviate the allegedly novel feature of the present invention.

The court finds that e-Image’s proposed construction logically follows from and is most consistent with the parties’ stipulated construction of “first movable support structure.” Because the parties agree that “carriage” means a “movable support structure,” the dispute comes down to what “second” means. But “second” is not a

term that requires any further clarification in this context. Even if it did, ST Imaging's proposal that "second" should be read as "separate and distinct from the first carriage" does not follow. Objects can be characterized as having a relationship between each other as "first" and "second" but not necessarily be wholly separate and distinct from each other.

Moreover, ST Imaging's proposed construction adds elements – separateness and distinctness from the first carriage – not necessarily called for in the claim language. Finally, the court agrees with e-Image that the construction proposed by ST Imaging lacks clarity. By adding the words "separate and distinct," the meaning of which are not self-evident, ST Imaging is simply adding more terms that would need construing.

III. "Diffusing element"

The device embodied in the '019 patent operates by illuminating microform media. To more evenly illuminate that microform media, the light is diffused. Thus, claims 40 and 62 identify "a diffusing element ... located between a light source and the microform media support structure."

e-Image proposes that the term "diffusing element" be construed to mean "a device that spreads or scatters light to create a more uniform illumination source." It argues that its construction is the ordinary meaning of the term as evidenced by dictionary definitions, which it contends is consistent with how the term "diffusing

element” is used in the patents. It contends that it has merely rephrased the description of the term from the specification to make it more understandable to a jury.

ST Imaging contends that, before consulting a dictionary, the court should look to the intrinsic record to see how the patentee construed the term. It argues that “diffusing element” must be construed to be “frosted glass,” which is a suggested embodiment of the term in the specification (“Diffuse window 40 can be a frosted glass which diffuses the light emanating from array 36, thereby creating a more uniform illumination source.” (’019 patent at 5:3-5)).

There is nothing about the term “diffusing element” that suggests that it must be frosted glass to the exclusion of any other material that might diffuse light. Although the patent states that the diffuser “*can be* a frosted glass” (emphasis added), there is no reason to conclude that, in articulating this embodiment, e-Image disavowed all other embodiments. *See Hill-Rom Servs. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014). Thus, the court rejects ST Imaging’s proposed construction of the term.

It is clear from the context of the patent that light is what is being diffused. Moreover, the intrinsic evidence states that “diffusing” is intended to “create[] a more uniform illumination source.” (’019 patent at 5:4-5.) This is consistent with the common and ordinary sense of the verb form of “diffuse” as applied to light. *See, e.g.*, Oxford English Dictionary, <http://www.oed.com/view/Entry/52531> I. 1. b. (defining diffuse as

“to cause (light) to spread evenly, resulting in a reduction in intensity.”); (*see also* ECF No. 20 at 17 (similar definitions from other dictionaries)).

That might suggest that no further construction of “diffusing element” is necessary. *See Cognex Corp. v. Microscan Sys.*, 2013 U.S. Dist. LEXIS 139687, 4 (S.D.N.Y. Sept. 16, 2013) (holding that “tapered diffuser” required no construction). However, “diffusing” is a term that may not be readily understood by jurors. Thus, the court finds that reference to a dictionary definition for construction is appropriate. *See CFM Corp. v. Dimplex N. Am. Ltd.*, 2004 U.S. Dist. LEXIS 7065, 14-15 (N.D. Ill. Apr. 22, 2004) (relying upon dictionary definitions to construe “diffusing surface” as “a surface that disperses and softens light”); *see also Old Town Canoe Co. v. Confluence Holdings Corp.*, 448 F.3d 1309, 1316 (Fed. Cir. 2006) (discussing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1324 (Fed. Cir. 2005)) (noting that a court may consult a dictionary to elucidate claims).

The court generally agrees with e-Image that its proposed construction accurately describes “diffusing element” as used in the patent. The court further finds the proposed construction will assist the jury in understanding the claim. However, the court will omit “scatter” from the construction proposed by e-Image. “Scatter” in both its lay and scientific senses suggests a lack of uniformity. *See, e.g.*, Oxford English Dictionary, <http://www.oed.com/view/Entry/172150> 3. a. (defining “scatter” as, “To throw about in disorder in various places.”); 5. e. (defining “scatter” in the context of physics as, “To throw back (light) brokenly in all directions. More widely, to deflect,

diffuse, or reflect (radiation, particles, or the like) in a more or less random fashion.”) This is inconsistent with the latter portion of e-Image’s proposed construction—“...to create a more uniform illumination source”—which the court finds essential to the construction of “diffusing element.”

Therefore, consistent with the common and ordinary meaning of the verb “diffuse” when used in the context of light, and consistent with the intrinsic evidence, the court construes “diffusing element” as “a device that spreads light to create a more uniform illumination source.”

IV. “Lead member”

The term “lead member” is used throughout the claims in the ‘019 patent. e-Image urges the court to construe the term as “guiding element.” ST Imaging proposes that it be construed as “a component that guides and drives a mechanically coupled device.”

According to e-Image, although the specification references lead screws that serve a dual function of guiding and driving elements, it goes on to provide that the guiding and driving functions can be separated:

The lead screws serve a dual function of providing guiding elements as well as drive elements for lens and sensor carriages. It is contemplated that the present invention can include alternate designs which can separate these two functions of guiding and driving using, for example, rails or unthreaded rods or a combination thereof for guiding, and a belt or rack and pinion arrangement or a combination thereof for driving.

(‘019 patent at 6:24-31). Thus, the claims use the broader term “lead member.”

e-Image also points out that claim 1 of the '019 patent recites "a first elongated and substantially straight lead member." Claim 36 recites "[t]he apparatus of claim 1 wherein the first lead member includes a first lead screw." Because dependent claim 36 explicitly recites "lead screws," construing "lead member" in claim 1 as limited to the function of a lead screw (both guiding and driving) would render claim 36 superfluous.

According to ST Imaging, the lead member must do more than merely guide. (ECF No. 22 at 13.) It contends that the construction of "lead member" as an element that solely guides was explicitly disavowed in the prosecution of the '019 patent. The application initially referred to the element as a "guide member" but was amended to substitute "lead member" for "guide member." (See ECF No. 22 at 14.) This reflects that e-Image understood that the terms "guide" and "lead" have separate and distinct meanings. It argues that the specification requires that the lead element both guide and drive.

The amendment upon which ST Imaging's argument relies was a preliminary, pre-examination amendment and not done in response to any action taken by the USPTO. See 37 C.F.R. § 1.115. As explained by e-Image, the amendment came about when it recognized what it refers to as a "typo" in the application. Claims 2, 4, 15, 33, 42, 44, 46, 47, 62, 64 referred to a "guide member." (ECF No. 22-4 at 124, 125, 126, 129, 133, 136.) Claims 23, 24, 25, 27, 28, 33, 37, 42, 64 referred to "lead member." (ECF No. 22-4 at 127, 128, 129, 132, 137.) In fact, not only was there apparent inconsistency among claims,

there was an apparent inconsistency within certain claims. Claims 33, 42, 64 used both “guide member” and “lead member” to describe the same element. Thus, because different terms are presumed to have different meanings in patents, *see Chi. Bd. Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1371 (Fed. Cir. 2012), if e-Image wanted the terms to mean the same thing, amendment was necessary.

The court has no reason to conclude that the amendment was anything other than what e-Image says it was – a correction of an inconsistency in the patent language. The court certainly has no basis for concluding that the amendment was a disavowal of the term “guide” in reference to the “lead member” element.

As to e-Image’s argument that the specification discusses alternative designs where guiding and driving functions are separated, ST Imaging says these alternative designs were not claimed. (ECF No. 24 at 8; ‘019 patent at 6:27-31). Thus, they are not within the scope of “lead member” as that term is used in the claims.

Read in its entirety, it is clear that the specification contemplates “lead screws” to be a means by which driving and guiding functions are performed primarily by a single element. The fact that the claims do not refer to “lead screws” is itself a strong indication that the claims are not limited to this embodiment. But the specification makes it clear that guiding and driving may be separated—strong intrinsic evidence that “lead member” is not limited to a device that both drives and guides.

In sum, the court does not agree with ST Imaging's contention that, by choosing "lead member" over "guide member," the claimed element must both guide and drive. The court finds that "lead member" means merely "guiding element." Although the "lead member" may be capable of driving a component—for example, when the lead member is a lead screw—it is not required to do so.

V. "Drive Mechanism"

e-Image's proposed construction of the term "drive mechanism" is "parts connected to a motor for moving a component." ST Imaging's proposed construction is a "mechanism that applies force to drive the lead member."

e-Image's construction derives from its view that the lead member can, but need not, drive a component. It points to the same language in the specification of the '019 patent that it relied upon for its proposed construction of "lead member"—namely, that part of the specification which states that "the present invention can include alternate designs which can separate these two functions of guiding and driving, using, for example, ... a rack and pinion arrangement ... for driving." ('019 patent at 6:27-31.) Using a rack and pinion arrangement, the motor is attached to the pinion, which causes the component to be driven. The lead member is not driving and is not connected to the drive mechanism.

ST Imaging's construction derives from its contention that the lead member must drive a component. Because the lead member does not create its own force to perform

the driving function, “a force must be applied to cause the lead member to drive the mechanically coupled device.” That force comes from the drive mechanism, which drives (and therefore must be connected to) the lead member.

The court’s rejection of ST Imaging’s proposed construction of “lead member” undermines ST Imaging’s argument regarding the construction of “drive mechanism.” As discussed above, the lead member need not be capable of driving a component. An embodiment described in the specification provides that the drive mechanism is connected to and drives the lead member to move a component (*See* ‘019 patent at 6:7-9.) However, the Federal Circuit has “repeatedly warned against confining the claims to those embodiments.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005). In fact, the court “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Id.* (*Gemstar-TV Guide Int’l, Inc. v. ITC*, 383 F.3d 1352, 1366 (Fed. Cir. 2004)).

Certain claims here describe a device where the drive mechanism is independent of the lead member and the lead member is not driven. For example, claims 41 and 63 refer to a drive mechanism and lead member as separate components. (‘019 patent at 11:30-33, 47-49; 13:40-43, 57-59.) The drive mechanism is connected to the carriage but not the lead member. (‘019 patent at 11:37-40, 53-57; 13:47-49, 63-67.) Because it is not

connected to the lead member, the drive mechanism could not apply force to the lead member, as required under ST Imaging's proposed construction.

VI. Preamble and "digital microform imaging apparatus"

The phrase "digital microform imaging apparatus" appears in the preamble of every independent claim of the patents. e-Image contends that the phrase limits the claims. ST Imaging argues it does not.

According to e-Image, the specifications are replete with references to the invention as a digital microform imaging apparatus, including the title of the patent itself and the "Summary of the Invention." The phrase is used to describe the preferred embodiments. It is essential to understanding the limitations of the claims. In short, the essence of the invention is a digital microform imaging apparatus and, as such, the phrase limits the claims.

ST Imaging contends that the preamble does not recite essential structure or steps. Deletion of the preamble would not affect the structural definition or operation of the apparatus itself. The preamble merely states the purpose or intended use of the invention and does not define any limitations. Thus, the phrase does not limit the claims.

In the opinion of Judge Dyk of the Court of Appeals for the Federal Circuit, the question of whether a preamble should be construed as limiting has been a question that the Federal Circuit has struggled to resolve. *Am. Med. Sys. v. Biolitec, Inc.*, 618 F.3d

1354, 1363 (Fed. Cir. 2010) (Dyk, J., dissenting) (urging the Federal Circuit to address the issue en banc and advocating for a rule that a preamble acts to limit the claim). He characterized the Federal Circuit's case law on the subject to be "rife with inconsistency, both in result and in the articulation of the test," *id.*, a view seconded by Donald Chisum, who referred to case law on the matter as "difficult to reconcile," *id.* at 1364 (quoting Donald S. Chisum, *Chisum on Patents* § 8.06[1][d] (2010)). Nonetheless, absent further clarification from the Federal Circuit or the Supreme Court, this court must wade into the case law as it currently exists and attempt to discern whether "digital microform imaging apparatus" in the preamble limits the claims that follow.

"Generally, the preamble does not limit the claims." *Allen Eng'g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). "However, the preamble may be limiting 'when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention.'" *Id.* (quoting *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995)).

"Whether to treat a preamble term as a claim limitation is 'determined on the facts of each case in light of the claim as a whole and the invention described in the patent.'" *Am. Med. Sys. v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010) (quoting *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003)). If the claim preamble gives "'life and meaning' and provide[s] further positive limitations to the invention claimed," the preamble limits the claim. *Id.* Stated another way, "a preamble

limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim. Conversely, a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.” *Catalina Mktg. Int’l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (internal citations and quotation marks omitted). “If the preamble ‘is reasonably susceptible to being construed to be merely duplicative of the limitations in the body of the claim (and was not clearly added to overcome a [prior art] rejection), [the court does] not construe it to be a separate limitation.’” *Am. Med. Sys., Inc.*, 618 F.3d at 1359 (quoting *Symantec Corp. v. Computer Assocs. Int’l, Inc.*, 522 F.3d 1279, 1288-89 (Fed. Cir. 2008)).

The patents are clear that the inventors were addressing the particular matter of digital microform imaging. The term “digital microform imaging apparatus” (a term used so often in the patents the drafter chose to initialize it as “DMIA”) is used throughout every aspect of the patents, including the specification. It is also identified as the “field of the disclosure” and is the title for each patent. *Cf. Poly-America, L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004). To conclude that the preamble does not limit the claims “would be divorced from reality.” *See GE Co. v. Nintendo Co., LTD.*, 179 F.3d 1350, 1362 (Fed. Cir. 1999). Consequently, “the claim preamble in this instance does not merely state a purpose or intended use for the claimed structure. Rather, those words do give ‘life and meaning’ and provide further

positive limitations to the invention claimed.” *Id.* (quoting *Corning Glass Works*, 868 F.2d at 1257). The court concludes that the preamble “digital microform imaging apparatus” limits the claims.

VII. “At least somewhat maintain focus while adjusting zoom”

e-Image proposes that the court should construe “at least somewhat maintain focus while adjusting zoom” to mean “keep the image generally focused while adjusting zoom.” It argues that the proposed construction will be easier for the jury to understand. (ECF No. 23 at 30.) ST Imaging asserts that e-Image’s proposed construction “fails to provide any additional clarity to an already straight forward term.” (ECF No. 22 at 23.) It contends that no construction is necessary.

The court does not find that “keep the image generally focused” while adjusting zoom is any more understandable than “at least somewhat maintain focus” while adjusting zoom. “Generally” and “somewhat” are largely synonymous, and the court does not find either to be more readily understandable than the other. Nor is the court presented with any reason for concluding that a lay person’s understanding of this straightforward term would be any different from the understanding of a person of ordinary skill in the art (much less that e-Image’s proposed construction would remedy any such concern). Consequently, it is unnecessary for the court to construe this claim. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362-63 (Fed. Cir. 2008); *see also United States Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir.

1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”).

VIII. Conclusion

Based upon the foregoing, the disputed terms in the patents at suit are construed as follows:

- “second carriage”: a second movable support structure;
- “diffusing element”: a device that spreads light to create a more uniform illumination source;
- “lead member”: guiding element;
- “drive mechanism”: parts connected to a motor for moving a component;

The court further concludes that “digital microform imaging apparatus,” as used in the preamble, limits the claims.

Finally, the term “at least somewhat maintain focus while adjusting zoom” is clear without further construction.

SO ORDERED.

Dated at Milwaukee, Wisconsin this 4th day of November, 2016.


WILLIAM E. DUFFIN
U.S. Magistrate Judge